PROFESSIONAL ENGINEER

Official Publication of American Association of Engineers

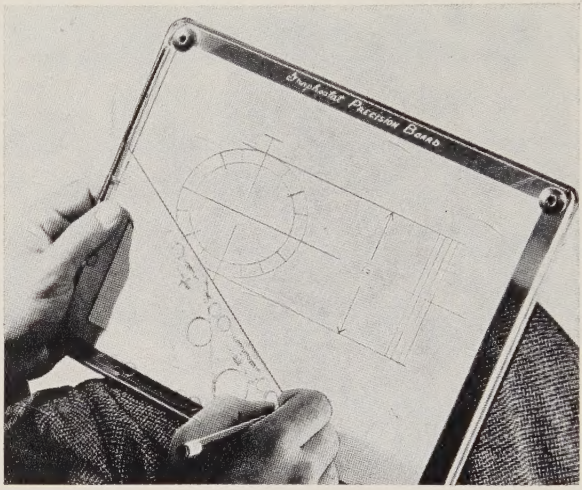
Illinois U Library

Winter Number

PLAN To Attend

The Centennial of Engineering International Convocation and Exposition depicting a Century of Engineering Progress to be held in Chicago during the month of September, 1952.

Sponsored by Forty-One National and International groups.



Transparent Plastic Drawing Board

New Precision Drawing Board

Plastic drawing board that can be carried easily in briefcase. Weighs less than 8 ounces

The Graphostat portable drawing board should have interest for architects and engineers who make small sketches in the field. Made of a single molded 9¾ x 12¼ inch piece of clear styrene plastic, the board has four corner clamps for attaching 8½ x 11 inch paper. It is unnecessary to use thumb tacks. Clamps are cleverly recessed into the plastic so that the triangle can ride freely over them without interference.

Metal straight edges at two sides of the board (one vertical and one horizontal) are retractable so that the triangles can be moved over all four edges of the paper. Light weight, the board can be carried easily in a briefcase. Triangles may be stored in recesses underneath the board and can be clamped securely in place. The high luster plastic presents an excellent long lived drawing surface with no thumb tack dents to cause bothersome drawing errors. For

ARTISTS
ARCHITECTS
CIVIL ENGINEERS
DESIGNERS
DRAFTSMEN
INVENTORS
MECHANICAL ENGINEERS
STUDENTS
SURVEYORS
TOOL DESIGNERS

Price $3.95

with Two 8-in. Triangles to fit the board, $4.95

ORDER FROM

A.A.E. BOOK DEPARTMENT

8 South Michigan Ave. **Chicago 3, Illinois**

PROFESSIONAL ENGINEER

"The Voice of the Engineer"

★

Published Quarterly by

The American Association of Engineers

8 South Michigan Avenue, Chicago 3, Ill.

lume 36 | September 30, 1951 | Number 3

Board of Directors
1950-1951

President
PATRICK J. LUCEY
6355 So. California
Chicago 29, Ill.

Vice President
GEORGE HAVAS
ice Pres., Kaiser Engineers
1924 Broadway
Oakland 12, Calif.

DMUND J. FITZMAURICE
5821 Pine Street
Philadelphia, Penna.

EVERETT C. SHUMAN
2801 Gunkel Blvd.
Toledo 6, Ohio

IOWARD R. PATTERSON
259 Bridge Street
Stamford, Conn.

L. S. NEEB
202 E. 6th Street
Tempe, Ariz.

OL. WALTER R. JEFFREY
9568 S. Prospect
Chicago 43, Illinois

Secretary-Treasurer
M. E. McIVER
Chicago, Ill.

Table of Contents

	Page
Welcome Parral Engineers!	4
Activities of Chaffey College Chapter AAE	5
The Bridge Builders — Dr. D. B. Steinman	8
Bakersfield College Chapter	9
Chapter News	10
Centennial of Engineering	15
News Items	17
Book Reviews	19

N.B. We purposely postponed this issue of Professional Engineer so that it would reach our members after the Holidays. The next issue will reach you in February.

M. E. McIVER, Editor

ican Association of Engineers assumes no responsibility for statements made or opinions expressed by contributors of articles published in Professional Engineer.

ed as second-class matter May 5, 1933, at the Post Office at Chicago, Illinois, under the Act March 3, 1879. Acceptance for mailing at the special rate of postage provided for in section 03, Act of October, 1917, authorized August 9, 1918. Subscription price, U. S., $1.00 a year nada, $1.50; foreign, $2.00. Printed in U.S.A.

Copyrighted 1950 by American Association of Engineers.

Welcome Parral Engineers To A.A.E.

The American Association of Engineers is proud to welcome to membership an initial group of thirty professional engineers who have recently formed an A.A.E. chapter in Parral, Mexico. The movement was started by Ing. Roberto Barrera C. of that city, who had been a member of the Association for a number of years, and is in sympathy with its ideals. Mr. Barrera fully realizes the importance of greater unity among engineers and a better understanding of their social and economic problems, and is willing to contribute time and effort in behalf of his fellow engineers.

We wish to express our gratitude to Ing. Barrera for his fine work, and at the same time send greetings to our brother engineers across the border. We know that every member of A.A.E. joins with us in extending to these Engineers a hearty welcome.

The Parral Chapter starts its first year with these men at its helm:

President: Ing. Roberto Barrera C., General Superintendent of Machinery, Compania Minera Asarco.

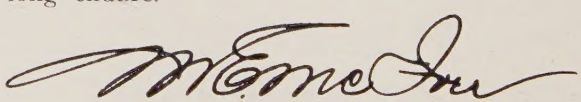
Vice President: Ing. Mark D. Fowler, General Superintendent, Parral Unit, A. S. & R. Co.

Secretary: Ing. Roberto N. Miranda, District Manager, Cia. Agricolay de Fuerza Electrico del Rid Conchos.

Treasurer: Ing. Alfredo Arguelles, Mine Foreman, Cia. Minera Asarco.

Directors: Ing. C. A. Green, Surface Superintendent, Minas de Iguala, S.A. de C.V.; Ing. Philip B. Brown, Superintendent Colorado Unit, American Smelting & Refining Co.; Ing. Lorenzo Ceballos, Div. Mine Foreman, Minas de Iguala, S.A.

May we pass on to our new chapter the thought expressed by the Association's first president in these significant words: "There must be as the basis of every organization that lives, an altruistic spirit. No organization that is founded on selfishness can endure permanently, but an organization that is founded on altruism, on the desire to do for others rather than a desire to get for oneself, has an element of life that will make it long endure."



Secretary

Activities of the Chaffey College Engineers Club, AAE

By Dick Livezey, President, Chaffey Club

THE first activity of the 1951-1952 school year was a dinner meeting held on October 2, in which the new members of the club were officially installed. This was followed by the presentation of a $25.00 scholarship award to Greg Wroblewski, one of our club members, by the San Bernardino Chapter of the American Association of Engineers. The speakers of the evening were the Assistant Chief Test Pilot and the General Man-

A.A.E. Student Group, Chaffey College

ager of the Northrup Aircraft Corporation at the Ontario International Airport. A short talk was given on the Flying Wing, and this was followed by a moving picture of the "Wing" itself. Next, Northrup's new jet fighter, the F-89 (Scorpion) was fully described and its history explained. The final event of the evening was a demonstration of the jet pilots flight suit used in the F-89.

The first field trip of the year consisted of a two hour guided tour through the Kaiser Steel Corporation at Fontana, California, on October 12. The entire steel-making process was illustrated and explained as our group

made its way through the various furnaces and mills. The coke ovens and by-products, the blast furnaces, the open hearth furnaces, the stripping building and the soaking pits, and finally the blooming and the rolling mills were all thoroughly inspected by our interested group.

One field trip which always makes a big hit with the members of the club is the Trona-Randsburg trip. This year the overnight trip was taken on October 27 and 28. On the first day our group of fifteen fellows toured the laboratory and heard some of the history of the American Potash and Chemical Corporation.

The formation of Searles Dry Lake, where the rich brine is obtained for the separation and purification of the various compounds, was also explained. Next we visited the Westend Chemical Corporation where we followed and observed the processes involved in the refining of the salts and compounds. After sleeping in sleeping bags that night, we departed for Randsburg the next morning. Randsburg was a very rich and prosperous mining town in the old days, and it is famous for the Yellow Aster gold mine. Our group went through the desert museum, toured the mining area, which included a visit to the Yellow Aster mine, and saw the old deserted stamp mills. We concluded our trip that afternoon with a visit to the tungsten mining area situated near Red Mountain.

On November 9 our club took a short field trip to Pomona, where we visited the Wayne Manufacturing Company and the Pomona Tile Company. The Wayne Manufacturing Company is a small but very efficient and interesting plant. They manufacture street sweepers, and ship them to various cities all over the world. At the Pomona Tile Company, our group saw the different processes involved in the making of tile, and they obtained a good understanding of certain phases of the ceramics industry.

November 30 we visited the Chrysler Motors assembly plant in Maywood, where new cars are assembled at a terrific rate in order to keep up with the public demand, and the Los Angeles *Times,* which is one of the leading newspapers of the country.

During Easter vacation our club usually takes its longest trip of the year. The proposed three-day trip this year will include a visit to the following places: On the first morning our group will meet at Mr. Flum's home for a delicious breakfast, and then start for Lake Mathews. After seeing the lake, we will visit Alberhill Brick, Tile, and Clay Products Plant, look through Pala Mission, tour the Palomar Observatory and hear a lecture on its history and operation, and finally spend the first night at Lake Henshaw. On the second day we will drive to Julian, visit a mine, and hear a lecture on mining. Next we will go on to Imperial where a lecture will be presented on the All-American Canal by one of the engineers. We will visit a siphon, a power plant, and a pump plant and that night camp out in the great dunes along the canal. On the third day we will visit Imperial Dam and inspect the desilting works, look around Laguna Dam, and see Pilot Nob Drop. After driving to Yuma, Arizona, we will

visit the Old Territorial Prison Museum. Concluding our trip we plan to drive home around the Salton Sea via Palm Springs.

In May we are planning to take a half-day trip to the Pasadena area. First of all we will probably tour the California Institute of Technology, and visit some of the laboratories where actual experiments are constantly being performed. After having dinner in Pasadena, we will visit the Griffith Observatory. There we will inspect the many rock, mineral, and meteorological displays, hear a lecture on the stars and planets which are actually projected on a dome ceiling, and finally look at the heavens through one of their 10-inch telescopes.

The American Association of Engineers is proud of its Student Members. It was found by young engineers, enthusiastic, idealistic youngsters, who with the guidance of some of the outstanding engineers of the land, perfected an organization devoted to the social and economic problems of the engineer, and it has pioneered successfully in its chosen field since its inception in 1915.

Many of the men who have directed the course of the Association, some as presidents, others as key workers, locally and nationally, joined the Association when they were in college. Upon the young engineers of today, as in the past, depends the future of the Association. We hope that each A.A.E. student member will aim to be a credit to his profession, not only a successful engineer, but an all-around full-fledged professional man taking an active interest in his professional societies.

One of the A.A.E.'s outstanding members, a man who has always been deeply interested in the welfare of the younger engineers, is Dr. David B. Steinman, internationally known bridge engineer, and a Life Member of the Association. We are pleased to reprint, on the following page, one of his beautifully worded poems, which surely is a challenge as well as an inspiration to the young engineer. From time to time we will print other poems and excerpts written by the Eminent Doctor, and sincerely hope that our student members will not only read them, but will discuss them in some of their chapter meetings.

Dr. Steinman was recently awarded the Norman Medal, the highest award of the American Society of Civil Engineers, for his paper entitled "Aerodynamic Theory of Bridge Oscillations." This is the second time that Dr. Steinman has won the Norman Medal. We should like to pass along to our student members a statement made by the Doctor which we think pays a high compliment to the Engineer, and fittingly sets forth his place in society:

The Engineer is a builder. He builds his dreams and the dreams of his fellowmen into enduring realities.

With the truths discovered by the Scientist, the wealth garnered by the

Business Man, and the beauty dreamed by the Artist, the Engineer performs ever greater miracles—rearing the resplendent structure of Civilization and Human progress.

And thus the Engineer goes on through the ages—overcoming obstacles, conquering new forces, and reshaping the physical world. Unsparing of his energy, he plans and toils to create comfort, wealth and happiness for his fellow-wayfarers. He is the pioneer and the leader in the onward march of Civilization.

With the succesful achievement of each new monumental task, the Engineer has grown in strength, and greater responsibilities and tasks have been entrusted to him. Today he has to be Scientist, Artist and Business Man, as well as Engineer. All four are now embodied in him and find expression in his creative skill.

THE BRIDGEBUILDERS

By D. B. Steinman

Three youths, with high ambition filled,
Besought a master, nobly skilled,
To train them in the builder's art.
He strove to reach each mind and heart;
And then, as touchstone of his plan,
Assigned each youth to build a span.

The first apprentice worked with speed
And proudly finished in the lead.
But soon his hopes of praise were dashed:
His bridge was weak and quickly crashed.
He feared the master's glance to face
And fled the land in sad disgrace.

The next apprentice built a span
Devoid of beauty in its plan.
The lines were crude, the form was mean—
A discord in the peaceful scene.
Yet, though reproached, the youth held fast:
"Suffice it that the bridge will last!"

The master spoke: "You have no right
To perpetrate a lasting blight.
Whoever builds an ugly span
Is faithless to both God and man.
No one deserves the trust to build
Unless with artist's passion filled."

The third disciple wrought his dream
And built a symphony supreme.
The best in heart and brain of man
Took form in this inspiring span—
A bridge uniting strength and grace,
A gift of beauty to the race.

Then spoke the master: "Nobly wrought!
You caught the dream the world has sought.
In beauty glows the spark divine
To carry forward God's design.
Your work will lift the hearts of man,
And all will bless you for your span."

Chaffey Officers

In sending Headquarters the names of the chapter's officers for 1952, Dick Livezey sends good wishes to National Headquarters and pays tribute to their sponsor, Arthur Flum, in this fashion: "We all think that we have a very fine Engineering Club at Chaffey College, and we feel that it is largely due to the fine leadership of Mr. Flum, whom we all admire very much." And if we could talk to Mr. Flum we are sure he would say: "Sure, we have a fine Club, because we have a fine group of fellows. I admire them very much." That's the spirit that makes the Chaffey Club and the Chaffey College itself so successful.

Leading the group for 1952 are: Dick Livezey, president; Dene Hatch, vice president; Allen Amsbaugh, recording secretary; Robert Bohle, corresponding secretary; Ben Eby, treasurer, and Joe Lecce, field trip chairman.

Reading from left to right: Charles Bernard, Chapter President; Carl Schlaepfer, an engineering student from Switzerland; C. M. Corbit, Jr., E. M. Hemmerling, AAE Adviser; Doris Aldrich, guest student; Reuben Levin, an engineering student from Israel.

Bakersfield College

Edwin M. Hemmerling, Adviser, Bakersfield College Student Chapter, A.A.E., gives Headquarters an interesting account of the activities of the group. We would like you to have the story first-hand, so shall quote from Mr. Hemmerling's letter:

"Once again we have an active group. We hold bi-weekly meetings, and try to provide for a guest speaker or for a film on engineering for each gathering. Whenever we have a noted authority on engineering address us we like to share him with students who may not belong to our chapter. Hence we invite anyone who is interested to attend.

"Among our social pursuits: We had our annual steak bake up Kern Canyon recently. Sixteen couples and three stags attended. Those 'she guys' who didn't bring dates had to cook the delicious spencer steaks and serve the couples. This annual affair provides a means of helping the gang really 'get acquainted.' Don't let anyone tell you pre-engineering students are not socially well-adjusted. These guys are all right! We have accepted a challenge from the Renegade Knights, our college service club, to a bowling match.

"During the spring we plan to make several field trips to engineering projects of note in this area. We also plan to participate in the annual college Spring Carnival. And then there is always the much looked forward to and much talked about annual weekend of fishing up in the High Sierras next spring.

"C. M. Corbit, Jr., District Engineer for the American Institute of Steel Construction, Inc., Los Angeles recently addressed the group, at which time the photograph, reproduced on this page, was taken. The girl in the picture is a science major (not a member of A.A.E.), whom the photographer asked to pose with the group."

Looks to us as though our young engineers are making their college days

happy as well as instructive. Learning to make friends and get along with people always pay big dividends.

Hoff Heads Phoenix Chapter

Amos H. Hoff, Director of Engineering, Phoenix College, and nationally known designer and scientist, is the new president of the Phoenix Chapter, succeeding F. W. Stevenson. Serving with Mr. Hoff are: Clyde Myers, first vice-president; Lloyd LeRaine Pike, second vice-president, and Daniel Weir who was re-elected secretary and treasurer. William H. Bartlett was elected to succeed Frank P. Hall as director.

At the chapter's luncheon meeting on Thursday, December 27, the outgoing president, F. W. Stevenson, was presented with the jewelled past president A.A.E. pin. Dr. Gustav Egloff, Director of Research, Universal Oil Products, and a member of the American Association of Engineers, was a guest of the Chapter at one of its recent luncheon meetings. According to word received at Headquarters from Secretary Weir, the chapter is preparing a membership drive, spearheaded by Bill Stevenson . . . the right way to start the New Year. Let's all cooperate and make that same resolution—"A New Member for A.A.E. in 1952."

San Bernardino Chapter Sets Up Scholarships

The San Bernardino Chapter is to be congratulated on one of its new activities. They are giving three annual scholarships of $25 each to the outstanding engineering student from each of the three junior colleges in their district, Chaffey, Riverside and San Bernardino Valley. The scholarship is awarded to the outstanding engineering student, but will give great emphasis to student activities, community service, and all those attributes of the well-rounded citzen. The scholarships were originally set up under the chairmanship of J. T. Wootan and J. R. Jahn of Riverside is the present chairman.

The first awards went to Wes Kendall of Riverside Junior College and Greg Wroblewski of Chaffee Junior College.

Arizona State College Chapter

Philip Gottlieb, secretary of our student chapter at Arizona State College, Arizona, writes that the boys are exceptionally busy with school and chapter activities, but that he hopes to send Headquarters a "complete picture of the chapter's activities." We know it will be good, as the Engineers at Arizona State are fine lads, earnest and progressive.

North Idaho Junior College

"So far this year," writes D. H. Moser, head of the Engineering Department at North Idaho Junior College, the A.A.E. student chapter has had several business meetings, sponsored one school assembly in which Norman Radford, one of our members, gave a talk on 'Geological Engineering,' and showed his collection of rocks and minerals. We have had one dinner meeting at which members of the profession met with us. Newton Wakefield of Wakefield Engineering Company gave a talk on the 'Wakefield Compass Compensator.'

"We are planning several field trips to nearby engineering projects, more dinner meetings and the traditional 'Engineers Ball.'

"Our officers for the year are as follows: President, Don Scott; vice president, Larry Hendrickson; secretary, Tom Hoiland, and treasurer, Robert LeCain."

Best of good wishes from National to all the boys at North Idaho.

San Bernardino Chapter

The November meeting of San Bernardino Chapter was held at the Derby House Cafe, Colton. The group visited the Crane Pacific Plant. This is where all of Crane's sanitary products are made and is the latest development in Plant Engineering for these products.

The Chapter started its 1951-1952 program in good form by presenting scholarship awards to Wes Kendall of Riverside Junior College and Greg Wroblewski of Chaffey Junior College. The boys fittingly expressed their appreciation and short talks were made by K. I. Marshall, Horace Hinkley, A. J. Kennedy, E. Q. Sullivan, and Professors

'wogood and Flum. The awards were ıade by John R. Jahn.

The December 11th meeting was held t Phil's Charcoal Broiler. R. A. Covıgton, Planning Director of San Berardino County, was the speaker.

Long Beach Student Chapter

The Long Beach City College Student Chapter, A.A.E. starts off the year in ood fashion with twenty-eight members nd a fine group of officers. Noble Hines s the sponsor of the group and Donald Sarton and Norman Johnson, honorary ıembers. The Associate membership oster consists of the following: Robert ance, Philip Richter, Rodney Pratt, Richard Whittington and William Hoover.

We shall hope to mention some of the Chapter's activities in the next issue. In ıe meantime, we extend good wishes to very member of the group for a fine chool year, and pledge our heartiest ooperation to the officers: Calvin S. Burns, President; Donald R. Keller, Vice President; Lee R. Hixon, Recordıg Secretary; Peter F. C. Crozier, Treasurer, and James A. Maxwell, Coresponding Secretary.

Riverside College Chapter

The student engineers at Riverside College, California, "are off to a good tart with two events to date" writes Archie J. Twogood, Head of Physics and Engineering at the college, and sponsor f our student group.

The group is most appreciative of the ıterest taken by the San Bernardino Chapter, A.A.E., in the Riverside stuents. At a recent joint meeting of the vo chapters, Weston Kendall was preented with a $25.00 scholarship award y the San Bernardino Chapter.

Another event which was of particular ıterest to the young engineers was a our through the Alcoa-Aluminum Comany of America's Vernon plant in Los ngeles. Other interesting events are lanned for the school year. The chapter as an active membership of 26, with Veston Kendall, President, and Robert wartzel, Secretary-Treasurer.

Chicago Chapter

The Chicago Chapter has held some extremely interesting meetings throughout the year. The principal speaker at the September 28th dinner meeting was Stanley G. Dulsky, Ph.D., who is a consultant with the Chicago Psychological Institute. "From Engineer to Executive" was his subject. President Arthur Zimmerman, in his "C.C.A.A.E. NEWS" published a few salient remarks made by Mr. Dulsky for the benefit of members not present, and because his remarks will be of interest to our readers, we pass them along, as reported by Mr. Zimmerman:

An executive is one who makes policy, does broad planning, and sees to it that policies and plans are carried out. He deals with ideas and people; not with things. After a plan is decided upon nothing happens until people do something about it.

The executive, then, needs two basic skills. One is planning, thinking creatively and logically, problem solving. The other is knowing how to work with people, how to motivate them, train them, supervise them.

Because his training demands a college education, the engineer is generally a person of superior intelligence. He has the basic intellectural potential and the scientific training for thinking logically and for solving problems. But, because of his training and, or basic makeup, he generally is too rigid and inflexible to think creatively. In planning for situations that involve people, there are factors that cannot be measured with scientific precision . . . in such situations the engineer is often at a loss.

Again, because of basic makeup and, or training, the engineer generally lacks skill in working effectively with people. He has had very little, if any, training in the social sciences and psychology. Frequently he has no interest in people, frequently he has emotional problems which preclude a satisfactory adjustment to others.

We know that to advance in our industrial economy, a man must shift from working with things to working with

ideas and people . . . in short, he must become a part of management, an executive.

What can the engineer, generally hired to help production or to do research, frequently buried in the laboratory, surrounded by costly apparatus, do to elevate himself from the ranks of the worker, in the eyes of management, to a position of responsibility and authority? Theoretically, the engineer is in a very favorable position, competitively, for advancement. He has many advantages over most of the company personnel . . . yet he is frequently passed over when advancements are made.

What can the Engineer do to prepare himself for advancement? What does he have to check on before he is sure he can make the grade? What new interests does he have to acquire? What skills does he need to develop? What can he do about the conversion of his "basic potential" to this new use?

Many of these questions can be answered by members of A.A.E., who have taken an active interest in the Association's activities. We welcome your comments.

Col. Walter R. Jeffrey, District Accountant Executive of the Chicago District Office of Price Stabilization, and Director of A.A.E., addressed the December meeting of the Chicago Chapter, discussing in general the Engineer in Government.

An African Jungle Story

If you like stories about the African jungle you will enjoy "Bob Clifton, Jungle Traveler," by one of A.A.E.'s members, Wilbur Hogue, now in Beirut, Lebanon, and son of G. H. Hogue, Fresno, California. The author has a literary style all his own. Words are well chosen to make interesting and fascinating reading. The beauty of this particular book is that the author "speaks" with authority, having spent considerable time in the jungles, while living in Africa for extended periods.

Engineering Manpower Commission

John T. Campbell, with The Chester Engineers, Pittsburgh, Pa., was the Association's official representative at the Engineering Manpower Convocation held in Pittsburgh, Pa., in September, 1951. The Engineering Manpower Commission of the Engineers Joint Council planned the meeting and the Engineers' Society of Western Pennsylvania was the host organization.

Purpose of the convocation was to inform the Engineering profession about the critical shortage and the programs developed by the Engineering Manpower Commission to combat the problems created by the shortage.

Inauguration of Richard Anderson Harvill

The American Association of Engineers was represented at the inauguration of Richard Anderson Harvill, as President of the University of Arizona, by Vic H. Householder of Phoenix, Past President of the Association.

The inaugural exercises were held in the University Auditorium on November 15, 16 and 17th. Robert Logan Nugent, Ph.D., Vice President of the University, was Chairman.

Nobel Prize Winners

Nobel prize winners in medicine, physics, chemistry, and literature for 1951 were awarded December 10th in Stockholm. The prize in chemistry went to Glenn T. Seaborg and Edwin M. McMillan, both American atomic scientists and co-discoverers of plutonium.

The physics prize went to John D. Cockcroft of Britain's atomic city at Harwell, and Prof. E. T. S. Walton of Dublin's Trinity College.

A native of South Africa, Dr. Max Theiler of New York, Rockefeller Foundation discoverer of yellow fever vaccine, won the prize in medicine, and a Swedish novelist and philosopher, Par Lagerkvist, won the literature prize for his book "Barabbas."

The Nobel prizes were established in the will of the late Alfred Nobel, Swedish inventor of dynamite.

Arthur Richards

chards Represents A.A.E. at 30th Annual Meeting NCSBEE.

One hundred official delegates from 44 tes and 12 representatives of national gineering societies attended the 30th nual meeting of the National Council State Boards of Engineering Exiners held in Boston, Mass., Oct. 30, & Nov. 1, 1951. A.A.E. was represented Arthur Richards, Executive Engier, Larchmont, New York, and a Past esident of the Association.

Russell G. Warner, New Haven, nnecticut, presided at all business etings. The principal speaker of the nual banquet was Dr. H. S. Rogers, airman, E.C.P.D. and President of lytechnic Institute. The National uncil's Distinguished Service Certifite, which is awarded to members of te boards who have served more than enty years, was presented by Mr. arner to Dean R. A. Seaton of Kansas, arles A. Halbert of Wisconsin, and rbert D. Mendenhall of Florida.

Serving the Council for the ensuing year are: President, C. S. Crouse, Lexington, Kentucky, vice President, A. G. Stanford, Atlanta, Georgia, director, Central Zone, Bruce Williams, Joplin, Mo., director, Southern Zone, James H. Sams, Clemson, S. C., director, Northeast Zone, Junius T. Moore, Charleston, W. Va. Directors who hold over are Russell G. Warner, New Haven, Connecticut, and director, Western Zone, Stanley G. Palmer. T. Keith Legare, Columbia, S. C., is the Executive Secretary.

The next annual meeting of the Council will he held at Colorado Springs, Colo., on September 4-6, 1952. Headquarters in The Antlers Hotel.

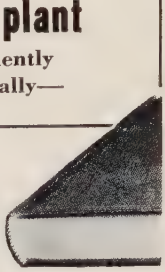
Richey Publishes a Book

H. G. Richey of New Orleans, La., a member of the American Association of Engineers for many years, has published a book which cannot help but be a great assistance to those engaged in the construction field. Mr. Richey's new book is entitled "A Reference Hand Book for Construction Engineers, Architects, Builders, Superintendents of Construction, and Building Construction Foremen."

During an experience of sixty years in construction, as carpenter, contractor and builder, architect, and including thirty-eight years in the Government service as superintendent of construction, construction engineer, and district engineer, supervising the construction of Federal Public Buildings, and other works, Mr. Richey has had a wide and most valuable experience. He has incorporated in his book a great deal of information gained through experience and practice, not usually found in books of this nature. He has added a chapter to his book in which he gives various receipts, hints, etc., which are valuable and interesting. Much of the information has been reduced to tabular form, and all the material is presented in a concise manner. The book is well arranged for convenient reference.

How to run any industrial plant

—more efficiently and economically—



Now you can find in a single handbook the facts that literally do show how to run a plant today—*any industrial plant*—efficiently and economically. This guidebook answers questions in the economic, mechanical, chemical, and power operation of a plant . . . gives essentials of today's good practice in 76 areas of plant operation and maintenance, covering principles and methods followed by leading manufacturing enterprises . . . and includes an amazing collection of data, tables, formulas, graphs, and quick-reference information.

Just Published

PLANT ENGINEERING HANDBOOK

William Staniar, Editor-in-Chief

Prepared by more than 80 specialists

1955 pp., 1406 illus., 544 tables, $15.00

Check this partial listing of contents for the plant problems of today and tomorrow this great book can help you solve

- ☐ Management engineering
- ☐ Materials of construction
- ☐ Power plants
- ☐ Refrigeration
- ☐ Industrial piping
- ☐ Welding
- ☐ Electrical speed control
- ☐ Hydraulic power systems
- ☐ Lubrication
- ☐ Mechanical packings
- ☐ Materials Handling
- ☐ Drying
- ☐ Trade Waste Disposal
- ☐ Vibration
- ☐ Industrial glass
- ☐ Plastics
- ☐ Patents and copyrights
- ☐ and many others

125,000 engineering and technical terms-translated from GERMAN to ENGLISH

Here is an outstanding dictionary for engineers, research workers, translators and others in need of quick, accurate translations of technical and engineering terms from *German to English*. It embodies technical nomenclature in advanced fields such as radar, electronics, television, jet propulsion, etc., etc. This dictionary treats over 125,000 terms used in a fields of engineering and industry, and also includ a large number of abbreviations.

Just Published!

German-English

TECHNICAL and ENGINEERING DICTIONARY

By Louis DeVries
Professor of Modern Languages,
Iowa State College

940 pages, 6 x 9, $20.00

This is an invaluable tool which covers a wide sco of specialized subject matter and represents an expe selection of German technical and engineering term In its preparation the author utilized the assistance lexicographers, research centers, experiment station industry and various branches of the armed forces. great many of the terms in this work are from glo saries individually compiled by others in industr colleges, and research organizations, and never befo published in book form. In both scope and arrang ment, you will find this dictionary so prepared as save you time and trouble in translation.

Covers these fields:

- Aeronautical Engineering
- Chemical Engineering and Chemical Technology
- Civil Engineering
- Electrical Engineering
- Mechanical Engineering
- Mining Engineering
- and a wide variety of industries

ORDER COPIES FROM A.A.E. BOOK DEPT.

8 South Michigan Avenue **Chicago 3, Illinoi**

The Centennial of Engineering

mmemorating the one hundredth anniversary of the A.S.C.E., sponsored by y-one national and international groups to be held in Chicago, September, 1952.

Completion of the 37-man board of directors who will head the tennial of Engineering celebration to be held in Chicago during 1952 been announced by Major Lenox R. Lohr, its president.

The Centennial, which is being sponsored by 41 national and inter- ional groups that include in their membership the great majority of engineering profession in the United States, will mark the 100th iversary of the establishment of engineering as a recognized civilian fession in this country. Prior to 1852, when the American Society Civil Engineers was founded, practically all important engineering rk on this side of the Atlantic was conducted by military engineers.

Filling of the last vacancies on the Centennial's board was con- mated with acceptances of their election by David Sarnoff, chairman the Radio Corporation of America; James M. Todd of James M. Todd sociates of New Orleans, and past president of the American Society Mechanical Engineers; and Gano Dunn, president of the J. G. White gineering Corporation, of New York.

Other prominent members of the board include Herbert Hoover, y living former President of the United States; Charles F. Kettering, neral Motors research consultant; Benjamin F. Fairless, president of U.S. Steel Corporation; and Dr. Robert E. Wilson, chairman of the ndard Oil Company of Indiana.

Officers of the Centennial in addition to Major Lohr, are Carlton S. octor, of New York and president of the American Society of Civil gineers, vice president; Titus G. LeClair, Commonwealth Edison Com- ny, Chicago, and past president of the American Institute of Electrical gineers, treasurer; and Charles F. Kettering, Chairman of the execu- e committee.

Frank W. Edwards, on loan from Illinois Institute of Technology ere he heads the department of civil engineering, is general manager the Centennial; E. L. Chandler, ASCE staff executive is secretary of convocation committee.

Howard F. Peckworth, managing director of the American Concrete e Association, is chairman of the coordinating committee on general angements; and G. Donald Kennedy, assistant to the president, Port- d Cement Association, is chairman of the committee on technical grams.

More than 50 Engineering Societies are cooperating to make this hering a momentous occasion. Serving A.A.E. as Chairman on neral Arrangements is Dr. Herman A. Wagner. Regular monthly etings are held by the Chairmen, and considerable interest is shown all participating societies.

The Association hopes that many of its members will plan to atte Engineering Centennial; in fact it is planning to hold its Annual meeti at that time. September 10 has been set as Centennial Day for socie activities, although, of course the Centennial itself will start on Se tember 3 and end on September 13.

Further details will appear in the next issue of PROFESSIONAL EN NEER.

Colonel Jeffrey Directs FEMC

The third annual Chicago area seminar on "preparedness", know officially as the Field Economic Mobilization Course of the Industri College of the Armed Forces, was held during the first two weeks June. Walter R. Jeffrey, Colonel, CE-USA, National Director of t American Association of Engineers, served as Director. Colonel Jeffr co-ordinated all of the preliminary arrangements for this session, assist in the nomination and selection of civilian conferees, correlated t agenda, and so forth.

Five hundred fifty civilian and military executives in the Chica area enrolled in the course covering all phases of economic mobilizati Attending the special classes in the Museum of Science and Indus auditorium were 380 civilian enrollees including 330 executives fr commerce and industry, 20 labor officials and 30 citizens from ot fields, 170 national guard and reserve officers at the policy-making le

The Industrial College of the Armed Forces was established 1924 to train army officers in the industrial aspects of war. From y to year the curriculum was broadened. Three years ago civilian exe tives vital to economic mobilization began taking the course.

Principal sponsor of the course is the Defense Department und which Major General Arthur W. Vanaman, USAF, serves as comman ant of the Industrial College of the Armed Forces.

Co-operation in the Chicago economic area were committees head by Lt. Gen. Stephen J. Chamberlin, Fifth Army Commander; Major Ge Harry A. Johnson, 10th Air Force commander; Rear Adm. J. Ca Jones, Ninth Naval District commandant.

Dr. L. S. Lyon, chief executive officer of the Chicago Association Commerce and Industry, was chairman of the committee which selecte representatives of commerce and industry. William A. Lee, president the Chicago Federation of Labor, and Michael Mann, regional directo of the Congress and Industrial Organization, headed the committe selecting the representatives of labor.

Patrick J. Lucey, president of the American Association of Eng neers, headed the committee selecting prominent citizens from othe fields and Dan A. Sullivan, staff assistant to the vice president of Com monwealth Edison Company, was in charge of arrangements.

The 134-page prospectus was sent to a number of members of th Association interested in this special work.

News Items

xel Institute of Technology Celebrates 60th Anniversary

dmund J. Fitzmaurice, Past Presi- t of the American Association of gineers, represented the Association the Sixtieth Anniversary of the nding of Drexel Institute of Tech- ogy, held in Philadelphia on October 31 and November 1.

he Institute took this occasion to or the men and women of the engi- ring, scientific, and management pro- ions of the United States, and rded citations to sixty alumni for r civic contributions and professional mplishments. The citations were sented by Dr. James Creese and ncis S. Friel, co-chairmen of the vocation Committee.

aid Dr. Creese, "In honoring these nni who have served our country distinction both in peace and war, are at the same time honoring the nory of Anthony J. Drexel whose sight and generosity made the In- ite a reality. In celebrating our past, rededicate ourselves to the purposes which this Institute was originally nded, so that the Drexel of the fu- may continue with distinction in the ice of this community and the Na- ."

Safety Courses

ne spring term of the evening pro- n in industrial—and traffic—safety ning offered by the Center for Safety cation, New York University, begins ruary 4, 1952. The expanded cur- lum makes it possible for students lled for a full program during the to complete their course require- ts for a certificate in either indus- or traffic safety. In addition, new ents and students not working to- l a certificate are eligible for en- nent in any of the courses.

ne following will be offered in the ng term:

sic Required Courses: Safety Di- ors and Safety Engineers—Their lifications, Duties, and Responsibilities; Safety Organization: Values and Limitations; Management and Supervision in Accident Prevention; Psychology of Accident Prevention.

Required Courses, Industrial Safety: Industrial Hygiene and Occupational Diseases; Fire Prevention and Protection Inspection.

Required Course, Traffic Safety: Safety Supervision and Management in Commercial Vehicle Fleets.

Elective Course: Special Problems in Accident Prevention.

Students may register for the spring term until 6:00 P.M. daily during the week of January 27 or between 5:00 and 6:00 P.M. on the opening night of each course.

National Conference on Foreign Policy

Kenneth P. Armstrong, Washington, D.C., was the official representative of the American Association of Engineers at the National Conference on Foreign Policy, held at the Department of State, Washington, D.C., on October 30, 31 and November 1st.

Engineering Registration In Ireland

In his annual report, Honorary Secretary, E. A. Donovan, Cumann na n-Innealtoiri, (The Engineers' Association in Ireland) stresses the importance of unity in the profession, stating "that only by constant efforts on the engineers' part will the profession ever approach the object of representing all Engineers."

"The principal object of the Cumann's existence," says the Honorary Secretary, "the cause for Registration, continues to occupy each successive Council with its problems; this year progress was greatly impeded by the change in Government in the spring, and it is our sincere hope that as soon as the more urgent business before the Dail has been dealt with, we may be able to persuade the Minister for Industry and Commerce to show his interest in the bill and at last take some definite action to get it implemented."

Just Published!

MATHEMATICS FOR ENGINEERS

By Raymond Dull and Richard Dull

Webster—Chicago Corporation

Revised Third Edition

822 pages, 671 illus., $7.50

Here is a quick reference book for engineers, giving the information they need in the form in which they need it. It covers every phase of mathematics the engineer is likely to meet, from algebraic notation, determinants, and linear equations—through differential calculus, curve analysis, integration, summation, etc., etc. Many graphical explanations and illustrative examples enhance the reader's understanding of the subject, and enable him to successfully apply the methods set forth, in solving mathematical problems and equations in engineering.

For Sale by A.A.E. Book Dept.
8 S. Michigan Ave. Chicago 3, Ill.

Smoley Time Savers

for

Engineers, Architects, Students Draftsmen, Builders, etc.

1. Parallel Tables of Logarithms and Squares
   Flexible cover, gilt edges $5.00
2. Parallel Tables of Slopes and Rises
   Flexible Cover, gilt edges $4.00
3. Logarithmic-Trigonometric Tables
   Cloth, bond paper $1.50
4. Segmental Functions, Text and Tables
   Flexible cover, gilt edges $5.00

Smoley's New Combined Tables
(Four books in one volume)

A Handful of Time Savers—strongly and elegantly bound, with a thumb index.

$9.50

Get Your Copy of SMOLEY'S TODAY

A.A.E. BOOK DEPARTMENT
8 So. Michigan Ave. Chicago 3, Ill.

Issues Once Settled Cannot Be Reope

In a 3 to 2 decision in a case involv the Jacobs Manufacturing company West Hartford, Conn., and the C United Auto Workers union, a rul was made by the National Labor Re tions Board last summer, exempt employers from the obligation of b gaining with a union during the life a contract on any subject discussed negotiating a contract.

In other words, the employer can be compelled later on, while the contr is in effect, to resume bargaining on matter, even though an issue involv wages, hours or other employment c ditions is unresolved in an agreem between the employer and the union.

This is the first time the Board so ruled, and it is of interest to employer because it means that o they have reached an agreement wit union, they are assured that they not have to bargain during the ter the contract on a matter settled t intent and purposes when the cont was made and signed.

However, the Board ruled in this ticular case that an employer must gain with a union at any time, and means during the term of the contr on a subject that was not negoti during contract discussions.

Illinois Bell Engineers Petition Dismis

During 1951 the NLRB dismissed petition filed by an individual acting behalf of Communications Engine Illinois Bell Telephone Company, decertification of Commercial Teleph Workers Union.

In dismissing the petition, the Bo said: "Communications engineers not a homogeneous group with inter and skills which set them apart fr ALL others in the unit. They di from many of the other employees the unit only in degree, not in ba interests. Inasmuch as the unit sou thus, at the very least, fails to incl all the employees currently represen by the union who have duties and in ests in common, we find that it is appropriate for decertification purpos

Book Reviews

IE BOOK DEPARTMENT OF THE AMERICAN ASSOCIATION OF ENGINEERS INVITES YOU TO USE ITS SERVICES WHEN IN THE MARKET FOR TECHNICAL BOOKS.
SAVE TIME—MONEY—INCONVENIENCE

il Testing for Engineers, by T. Wiliam Lambe, M.I.T. John Wiley & Sons. $5.00.

A spiral-bound book 8¾" x 11¼", 165 ges, profusely illustrated with graphs d charts. The primary purpose of this ok is to supply a textbook for teaching l testing. Valuable as a reference ok for practicing engineers, and for rsonnel in soil laboratory. An excelt book on the subject it treats.

andard Manual on Pipe Welding, Heating, Piping and Air Conditioning Contractors National Association—2nd Ed. $7.50.

Written primarily for the piping conctor. Every effort has been made to esent what is today the most reliable, to date, and authoritative standards, actices, and theory in pipe welding. e authors recognize that the welding lustry is continually progressing, ich will mean revisions in their man- from time to time, especially in the d of alloy and non-ferrous piping.

ant Layout, Planning and Practice, Randolph W. Mallick, Ex. Staff Engr., Westinghouse Electric Corporation, nd Armand T. Gaudreau, Manageent Consultant. John Wiley & Sons —$7.50.

A practical book containing an abunce of valuable information gained m actual experience of the authors. itten with the administrative execue and plant engineer in mind, it was o developed as a handy guide for ior and junior engineers, and as a erence for engineering colleges and ools of business administration.

chitectural Graphic Standards, Ramey and Sleeper, 4th Ed. John Wiley Sons—$10.00.

The fourth edition of "The Architect's le," by the well known authors, is roximately 80% larger than the third ion. Contains 368 new plates, most of the others have been revised. The index has been expanded to include 11,000 references. The book is designed to give architects, builders, draftsmen, civil engineers, and others interested in buildings, the standards, facts and data they need to deal with every type and every phase of building.

Industrial Furnaces, W. Trinks, Prof. Emeritus M.E., Carnegie Inst. of Tech., Vol. 1, 4th Ed., John Wiley & Sons, $10.00.

In the new fourth edition, the general arrangement of subject matter has been retained, but a great deal of new material has been added, heating by induction, zone heating; charts on heat loss from intermittent operation of furnaces; combustion charts for No. 3 and No. 6 fuel oil; new methods of suspending furnace roofs; the more convenient charts of Hottel and Heisler have been included. In sort, the book can rightly be called the "bible" of the furnace engineer.

Introduction to Mechanical Design, T. B. Jefferson, Editor, The Welding Engineer, and Walter J. Brooking, Special Projects Dept., M. W. Kellogg Co. Ronald Press. $6.50.

This is a volume of a series in Mechanical Engineering edited by Burgess H. Jennings and is an excellent textbook in that it treats not only the practical viewpoint but follows closely the creative thinking of engineers who actually design machines. Processes are discussed rather fully, machine frames are given special consideration and styling, streamlining and finishing of machines are also covered, as well as many other important phases. All in all, a valuable and well prepared book.

Corrosion, Causes and Prevention, Frank N. Speller, D.Sc., 3rd Ed. McGraw-Hill Book Co.—$10.00.

A useful reference book for those in-

From the basic mathematics to the solution of advanced designs

Servomechanisms and Regulating System Design

VOLUME I

By HAROLD CHESTNUT
and
ROBERT W. MAYER
both of General Electric Co.

Devoted to the needs of engineers who have not had previous training or experience in the field of closed-loop control systems, this volume presents the solution of linear differential equations during both transient and steady state operations from the operational and Laplace transform points of view.

1951
506 pages
illus.
6 by 9¼
$7.75

GET YOUR COPY OF
"A REFERENCE HANDBOOK"
for
CONSTRUCTION ENGINEERS
ARCHITECTS
BUILDERS AND SUPERINTENDENTS OF CONSTRUCTION
BUILDING CONSTRUCTION FOREMEN
by
H. G. RICHEY
District Engineer (Retired)
Construction of Public Buildings
U. S. Treasury Department

A book of information gained through experience and practice.

$10.00

order from

A.A.E. BOOK DEPARTMENT
8 So. Michigan Ave. Chicago 3, Ill.

terested in any of the many phases of t corrosion problem, and a Handbook f the engineer and architect. Subject ma ter has been written with particul reference to the ferrous metals. T author has included valuable data r sulting from his own experience a from those with whom he has be associated in the study of corrosion du ing the past twenty years.

Fuels and Combustion Handbook. All J. Johnson, M.E., and George H. Au Prof., M.E., Villanova College. 1st E McGraw-Hill Book Co. $12.50.

A practical handbook, containing fa tual data on the properties, characte istics, and uses of all solid, liquid, a gaseous fuels, and the operation a use of combustion equipment. Many a vances and developments in synthe fuels have been added, for instance, t heat pump, gas turbines, spreader st ers, package boilers, etc. A guideb for fuel technicians, engineers and op ating men.

Advanced Engineering Mathematics. R. Wylie, Jr., Prof., Math., Univers of Utah, 1st Ed., McGraw-Hill Bo Co. $7.50.

A comprehensive and easily und stood treatise on advanced engineeri mathematics. Because the text is writt so that a student may read it with minimum of assistance from his instr tor, it is most valuable text. The auth has included an extensive appendix c ering many important topics.

Helicopter Analysis, Alexander Nikolsky, Prof., Aeronautical Eng neering, Princeton University. Jo Wiley & Sons. $7.50.

In this book, Prof. Nikolsky, one the country's leading authorities rotary wing aircraft, gives a gene physical picture of helicopter theory a offers a possible approach to the analy of some basic helicopter problems. A cording to the author, some of the a sumptions have never been proved, a some of the simplifications are qu liberal, but he has tried to follow t laws of nature consciously.

ıe New Physics, Sir C. V. Raman. Philosophical Library—$3.75.

Winner of the Nobel Prize, C. V. ıman is one of the most distinguished ysicists of our time, and discoverer the Raman Effect. His talks on pects of science are most interesting.

---

om the Life of a Researcher, Wm. Weber Coblentz, Philosophical Library—$4.75.

Most of the author's adult life has en spent in research problems in rmal radiation, and in studying inruments for measuring such radiation. his book, Mr. Coblentz describes his rsonal development and the folklore his time.

---

e Building Estimator's Reference Book, and Vest Pocket Estimator, Frank R. Walker, 11th Ed., Frank R. Walker Co. $12.00.

The first edition of this most useful d well-known Reference Book was blished thirty-five years ago. The new h edition has been completely reitten, revised and reset. Much new ta has been added to bring the book near up to date as possible. The thor has given the building industry valuable book throughout the years.

---

rd-All, reference booklet. General Design Co. $1.00.

A handy, compact reference tool for gineers and draftsmen, wire-bound in. by 6½ in. heavy cardboard. Conns tables and formulas, conversion les, comparison of wire gauges, table decimal equivalents, twist drill sizes, d other valuable information.

---

aphostat Precision Board. A. Parrick Company. Board, $3.95, complete with two 8 in. triangles. $4.95.

Here's a new portable drawing board use in office, plant, or laboratory. lded from Bakelite polystyrene plas- weighs less than 8 ounces. Size rox. 9 x 12. Two metal straight es, one vertical the other horizontal, are ingeniously retractable, thus eliminating need for a T-square, and enabling skilled precision work.

Soil Testing for Engineers, by T. William Lambe, M.I.T. John Wiley & Sons—$5.00.

A spiral-bound book 8¾" x 11¼", 165 pages, profusely illustrated with graphs and charts. The primary purpose of this book is to supply a textbook for teaching soil testing. Valuable as a reference book for practicing engineers, and for personnel in soil laboratory. An excellent book on the subject it treats.

Industrial Piping, Charles T. Littleton, formerly engineer in charge of Piping, American Cyanamid Co. First Ed. McGraw-Hill Book Co.—$8.00.

An excellent reference book on piping for piping designers, erection foremen and engineering students. The chapter on Estimating Piping Costs by R. A. Dickson, Standard Oil Co. of New Jersey is a valuable addition. Profusely illustrated with charts and tables.

Magnetic Materials, F. Brailsford, Ph.D., Research Dept., Met. Vickers Electrical Co., Ltd., Manchester, England. John Wiley & Sons—$1.50.

Methuen's Monographs on Physical Subjects—a series intended to supply readers of average scientific attainment with a compact statement of the modern position in each subject. This second edition aims to give advanced students and research workers an outline of the present knowledge of the subject in brief concise form.

Climate in Everyday Life, C. E. P. Brooks. Philosophical Library. $4.75.

Part 1 describes types of climate, their effect on various public services. Part 2, the effect of heat and humidity on manufactured goods, the smoke evil, and the accident of various types of storm. Part 3 discusses heating and air conditioning, clothing and various artificial weather controls.

The Practical Engineer, 1951. N. P. W. Moore, B.Sc., A.C.G.I., D.I.C., A.M. Inst. F, 63rd year. Pitman Publishing Corp. $3.00.

A pocket-size edition, with technical dictionaries in German, French, and Spanish, revised and rearranged. List of English and American technical journals. Useful tables and data. Internal combustion engine section has been extended. Basic data on the proposed unified standard screw threads have been included.

Practical Electricity and Magnetism, Maurice Rubin. Chemical Publishing Co. $7.50.

An informational book for the layman who wishes to learn about these two prime movers of our atomic age. Well illustrated.

Heat and Thermodynamics, Mark W. Zemansky, Prof., Physics, City College of N.Y. 3rd Ed. McGraw-Hill Book Co.—$6.00.

The purpose of this revised text is to provide an introduction to the subject matter of heat and thermodynamics for students preparing for a career in theoretical physics, chemistry, or engineering. Some excellent new material has been added, including new figures and new problems. An up to date, well written text.

Welding Principles for Engineers, Joe Lawrence Morris, Asst. Prof., M.E., Georgia Inst. of Tech. Prentice-Hall —$5.25.

Welding is still a new science, and with the rapid strides being made in the improvement of techniques, it is difficult to keep a textbook up to date. In his book the author has organized welding material appropriate for training on the college level, directed at the engineering college group. Well illustrated.

Elements of Television Systems, George E. Anner, Asst. Prof., E.E., New York University. Prentice-Hall—$10.35.

Book begins with a study of closed systems, those that rely upon cable connections between sending and receiv apparatus. In the second part of book the point of view is expanded include the complications introduced using a radio link in place of interc necting cables. Since details of a r art change rapidly, an attempt is m to concentrate on the basic princi involved. A valuable addition to field of television and its developme

---

Electro-Plating, by Samuel Field, A.R Sc., and A. Dudley Weil, Tech. D Grauer and Weil, Ltd. Pitman P Co. $6.00.

Recognized as the standard work electro-plating. The book explains illustrates the latest methods used this industry, the principles underly modern processes, and the plant apparatus employed in every branch the work. Thoroughly practical, c prehensive and well illustrated.

Fundamentals of Electrical Engineeri Prof. Fred H. Pumphrey, Univer of Florida. Prentice-Hall—$7.65.

The book is designed primarily students specializing in other fields engineering so that they can gain invaluable basis of a knowledge of electrical field. Also a good text first year electrical engineers. W written, 668 pages.

Principles of Electrical Engineering, H. Timbie, Prof. Emeritus, E.E., M T., and Vannevar Bush, Pres., Carne Inst. of Wash., assisted by George Hoadley, Prof. E.E., N.C. State C lege, 4th Ed., John Wiley & Sons $6.50.

Some of the more important topics a methods stressed in the fourth editi include advanced methods for analyzi electric and magnetic problems; pow ful methods of circuit analysis; t fundamental problems of the elect and magnetic fields; and the relation these problems to circuit analysis. T valuable experience gained by the a thors in teaching their own classes a in preparing the first three editio makes the new fourth edition extrem valuable.